

**ABSTRACT OF THE DISCLOSURE:**

A time-based switching method and system of SONET frames that utilize a common time reference is disclosed. Time is divided into a plurality of contiguous periodic time frames. A plurality of SONET frames is associated with a time frame; the plurality of SONET frames that are contained in each of the time frames is forwarded in a pipelined manner through the network switches. The system operates with high-speed wavelength division multiplexing (WDM) links. This switching method can be used to implement an all-optical SONET switching system.